

The listing of claims will replace all prior versions, and listing, of claims in the application:

LISTING OF CLAIMS

Claim 1. (Currently Amended) A conductive ~~(electrical, ionic, and photoelectric)~~ polymer membrane article, having a conductivity selected from the group consisting of electrical, ionic, and photoelectric, said article comprising:

a polymer solution, said solution including a conductive polymer and conducting nanoparticles, whereby said solution is selected from the group consisting of polyurethane (PU), polyethylene oxide (PEO), polyacrylonitrile (PAN), polyactic acid (PLA), polyvinyl acetate (PVA), and cellulose acetate, and

whereby said conductive polymer is selected from the group consisting of polyaniline, polypyrrole, polythiophene, polyphenol, polyacetylene, and polyphenylene;

and a non-woven membrane of polymer fibers, wherein at least some of the fibers have diameters of less than one micron;

wherein the membrane has an electrical conductivity of at least about 10^{-6} S/cm.

Claim 2. (Currently Amended) The conductive polymer membrane of claim 1 wherein the ~~membrane is photoelectric~~ solution includes a photo-reactive dye, said dye being selected from the group consisting of phthalocyanines, ruthenium complexes with organic ligands, porphyrins, and polythiophenes.

Claim 3. (Currently Amended) The conductive polymer of claim 2 4 wherein the membrane produces a current of at least 10^{-9} ~~about nanoamps/cm²~~.

Claim 4. (Currently Amended) The conductive polymer of claim 2 wherein the ~~polymer fibers~~ include a photo-reactive dye membrane includes photonic absorption and is photoelectric.

Claim 5. (Currently Amended) The conductive polymer membrane of claim 2 [[4]] wherein the polymer fibers further include conducting nanoparticles embedded therein.

Claim 6. (Currently Amended) The conductive polymer membrane of claim 2 [[4]] wherein the polymer fibers further include a conducting polymer.

Claim 7. (Original) The conductive polymer membrane of claim 1 wherein the conductivity is created by the inclusion of a conducting polymer in the polymer fibers.

Claim 8. (Original) The conductive polymer membrane of claim 1 wherein the conductivity is created by the inclusion of conducting nanoparticles embedded in the membrane polymer fibers.